

ABSTRACT

The invention provides a novel transferase that acts on a saccharide, as a substrate, composed of at least three sugar units wherein at least three glucose residues on the reducing end are linked  $\alpha$ -1,4 so as to transfer the  $\alpha$ -1,4  
5 linkages to a  $\alpha$ -1, $\alpha$ -1 linkages; a process for producing the transferase; a gene coding for the same; and a process for producing an oligosaccharide by using the same. Also provided are a novel amylase that has a principal activity  
10 of acting on a saccharide, as a substrate, composed of at least three sugar units wherein at least three sugar units on the reducing end side are glucose units and the linkage between the first and the second glucose units is  $\alpha$ -1, $\alpha$ -1 while the linkage between the second and the third glucose  
15 units is  $\alpha$ -1,4 so as to liberate  $\alpha$ , $\alpha$ -trehalose by hydrolyzing the  $\alpha$ -1,4 linkage and another activity of hydrolyzing the  $\alpha$ -1,4 linkage within the molecular chain of the substrate and that liberates disaccharides and/or monosaccharides as the principal final products; a process  
20 for producing the amylase; a gene coding for the same; and a process for producing  $\alpha$ , $\alpha$ -trehalose by using a combination of the transferase and the amylase.